

CLAIMS :

1. A method for encoding video signals corresponding to a sequence of frames each of which originally consists of two fields F1 and F2, in which the encoding step is preceded by a preprocessing step which itself comprises the sub-steps of :

(A) receiving the successive frames and delaying each of them with a delay of at least two fields ;

(B) adjusting said delay according to the following dominance change criterion :

(a) when a change from an F1 dominance to an F2 dominance is detected, the first field of the first F2 dominant frame is suppressed, said delay being therefore decreased by a quantity equal to "one field" duration ;

(b) when a change from an F2 dominance to an F1 dominance is detected, the last field of the last F2 dominant frame is repeated, the delay being therefore increased by a quantity equal to "one field" duration.

2. An encoding method according to claim 1, said sequence of frames being constituted either by film-type images, to which the 3:2 pull-down technique has been applied, or by video-type images consisting of two fields, said method comprising the steps of :

(A) detecting that the current sequence is constituted by film-type images ;

(B) encoding said current sequence, either after said preprocessing step when it is not detected as being of film-type or after implementation, on said current sequence, of the inverse 3:2 pull-down technique if it is detected as being of film-type ; and said detecting step comprising the sub-steps of :

(a) defining for two successive fields $F(n)$ and $F(n+2)$ of the same parity a number of pixels $N2$ such as $N2 = NTOT - N'2$, where $NTOT$ is the number of pixels in a field, $N'2$ is the number of pixels for which $ABS (val F(n) - val F(n+2)) < TH2$, ABS designates the function "absolute value", val designates the luminance of a pixel, and $TH2$ is a first predefined threshold ;

(b) comparing the result of the subtraction of two consecutive numbers $N2$, divided by $NTOT$, to a second predefined threshold THR ;

(c) detecting that the current sequence is constituted by film-type images only when said result is lower than said second threshold, said fields being then considered as equal.

3. A device for encoding video signals corresponding to a sequence of frames each of which originally consists of two fields F1 and F2, said sequence being constituted either by film-type images, to which the 3:2 pull-down technique has been applied, or by video-type images consisting of two fields, said device comprising :

(A) means for detecting in the input sequence of frames a sequence of film-type images ;

(B) means for receiving the successive frames of the input sequence, delaying each of them with a delay of at least two fields, and adjusting said delay according to the following dominance charge criterion :

(a) when a change from an F1 dominance to an F2 dominance is detected, the first field of the first F2 dominant frame is suppressed, said delay being therefore decreased by a quantity equal to "one field" duration ;

(b) when a change from an F2 dominance to an F1 dominance is detected, the last field of the last F2 dominant frame is repeated, the delay being therefore increased by a quantity equal to "one field" duration.

(C) means for encoding the input sequence of frames, either connected in series with means (B) when said sequence is not detected as being of film-type or after implementation of the inverse 3:2 pull-down technique if it is detected as being of film-type.

4. An encoding device according to claim 3, in which said detecting means comprise a set of subtractors, provided for receiving each one two successive fields of the same parity and determining per pixel the difference between these fields and followed by a set of circuits provided for taking the absolute value of said difference and storing it, computing in subtractors the successive differences between the successive values of these stored absolute values, comparing these differences to a predefined threshold, and detecting a sequence of film-type only when said difference is lower than a predefined threshold, said fields being then considered as equal.

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